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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,083	08/11/2006	Masaru Maruo	028359-00004	5863
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ARENT FOX LLP				
1050 CONNECTICUT AVENUE, N.W.				
SUITE 400				
WASHINGTON, DC 20036				
EXAMINER				
SALONE, BAYAN				
ART UNIT		PAPER NUMBER		
3726				
NOTIFICATION DATE		DELIVERY MODE		
08/30/2010		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DCIPDocket@arentfox.com  
IPMatters@arentfox.com  
Patent\_Mail@arentfox.com

### Office Action Summary

**Application No.**

10/589,083

**Applicant(s)**

MARUO ET AL.

**Examiner**

BAYAN SALONE

**Art Unit**

3726

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 June 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-2 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08/11/2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI.08)
- Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (Japanese Patent Application Publication No.S63-93530), in view of the RVDT-Based Draw Wire Position Transducer made by Firstmark Controls (<http://www.firstmarkcontrols.com/pmc0602.htm>).
3. Regarding Claims 1 and 2, AAPA discloses a part positioning apparatus and method for positioning a part in relation to a part fitting object, that comprises a movable table for holding the part to be fitted to a bottom surface of the part fitting object (work), a relative position detecting means (television camera) for detecting a relative position of the movable table with respect to the work, a table positioning means for moving, based on a signal from the relative position detecting means, the movable table within the same imaginary plane so as to position the movable table in a predetermined relative position with respect to a predetermined position of the bottom surface of the work, a table lifting means for having the movable table moved up and down under the work, and a part assembling means, mounted on the movable table, for fitting the part held by the table lifting means to the bottom surface of the work under the lifted (Page 1 of the Specification, Lines 13-23).

Regarding Claim 1, AAPA does not disclose a method comprising the steps of: setting on said part fitting object an engaging means provided on a tip end of a wire member which is possible to be pulled out and wound up; detecting a pulled-out length and an existing location of said wire member and moving said self traveling machine to eliminate relative positional discrepancies between said part fitting object and the part; fitting the part to said part fitting object in the state that the positional discrepancies are eliminated; and after fitting the part to said part fitting object, removing and retrieving said engaging means from said part fitting object.

It is well known in the art that draw-wire sensors are devices used to detect and measure linear position and velocity using a flexible cable and a spring-loaded spool; that are easily installable in tight areas, work efficiently in harsh or extreme environments and can be used in a wide variety of applications (i.e. industrial factory automation and automotive testing). Firstmark Controls makes a draw-wire sensor (RVDT-Based Draw Wire Position Transducer) comprising: an engaging means being provided on a tip end of a wire member (measuring cable) so as to be set on a respective object (i.e. the under carriage of an automobile as disclosed by AAPA); a sensed member for accommodating said wire member in such a state as to be pulled out and wound up (the wire being pulled out to be affixed to said automobile undercarriage and wound up once a measurement has been provided); a first sensor for detecting a pulled-out length of said wire member when the engaging means is set on the respective object and a second sensor for detecting an existing location of said wire member when said engaging means is set on the respective object (i.e. the sensors

provide a valid measurement relative to the position of the object to the part that will be assembled with the object).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method of the AAPA by replacing the camera sensors with multiple draw wire sensors similar to the sensors produced by Firstmark Controls to measure the position of the part fitting object relative to the work piece, for the benefit of monitoring the actual position of the workpiece and providing precise measurements to ensure the proper alignment of the part to the workpiece.

4. Regarding Claim 2, AAPA does not disclose an apparatus comprising: an engaging means being provided on a tip end of a wire member so as to be set on said part fitting object; a sensed member for accommodating said wire member in such a state as to be pulled out and wound up; a first sensor for detecting a pulled-out length of said wire member when said engaging means is set on said part fitting object; or a second sensor for detecting an existing location of said wire member when said engaging means is set on said part fitting object.

It is well known in the art that draw-wire sensors are devices used to detect and measure linear position and velocity using a flexible cable and a spring-loaded spool; that are easily installable in tight areas, work efficiently in harsh or extreme environments and can be used in a wide variety of applications (i.e. industrial factory automation and automotive testing). Firstmark Controls makes a draw-wire sensor (RVDT-Based Draw Wire Position Transducer) comprising: an engaging means being provided on a tip end of a wire member (measuring cable) so as to be set on a

respective object; a sensed member for accommodating said wire member in such a state as to be pulled out and wound up; a first sensor for detecting a pulled-out length of said wire member when the engaging means is set on the respective object and a second sensor for detecting an existing location of said wire member when said engaging means is set on the respective object.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the apparatus of the AAPA by replacing the camera sensors with multiple draw wire sensors similar to the sensors produced by Firstmark Controls to measure the position of the part fitting object relative to the work piece, for the benefit of monitoring the actual position of the workpiece and providing precise measurements to ensure the proper alignment of the part to the workpiece.

### ***Response to Arguments***

4. Applicant's arguments filed June 29, 2010 have been fully considered but they are not persuasive.
5. *Applicant argues the Firstmark publication does not disclose any of the claimed features of claims 1 and 2.*
6. In response to applicant's argument that the Yoshiro and Firstmark Control references fail to disclose any of the claimed features of claims 1 and 2, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the

test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

7. The Yoshiro reference does not explicitly disclose the characteristics of the claimed sensor of the instant application, however does disclose a similar positioning method wherein a part (22) supported by a movable table (50) having a table elevator (36) (i.e. a self travelling machine) is positioned with respect to a part fitting object (21). Instead of utilizing draw-wire sensors to detect the measurement of the part and the part fitting object the Yoshiro reference uses cameras to determine the relative positions of the part (22) and part fitting object (21).

8. As pointed out in the first Office Action and reiterated in the above 35 USC § 103(a) rejection, it is well known in the art that draw-wire sensors are devices used to detect and measure linear position and velocity using a flexible cable and a spring-loaded spool; that are easily installable in tight areas, work efficiently in harsh or extreme environments and can be used in a wide variety of applications (i.e. industrial factory automation and automotive testing). The Firstmark publication discloses a draw-wire *positioning* sensor (hence the title of the publication "Position Measurement and Control"), that measures various surfaces of a motor. The sensors work by measuring the movement of spring loaded cables (draw-wires) affixed to a particular surface.

9. Further as can be noted from the second figure on page 8 of the Firstmark Control reference the draw-wire sensor of Firstmark Controls retains all of the structural elements of the claimed sensor of the instant application. Utilizing the draw-wire sensor of Firstmark Controls in conjunction with the part and movable table of Yoshiro would

involve pulling out the cable (draw wire) of the draw-wire sensor and affixing the sensors to a part fitting object allows for measurements of the distance and position with respect to the part and part fitting object. Clearly the substitution of the draw-wire sensor of Firstmark Controls for the camera sensors of Yoshiro reads on the claimed positioning method and apparatus of the instant application, and would have been obvious to one of ordinary skill in the art.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BAYAN SALONE whose telephone number is (571)270-7739. The examiner can normally be reached on M-Th, 7:30 AM-5:00 PM EST.



If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bryant can be reached on (571)-272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BAYAN SALONE/  
Examiner, Art Unit 3726

/DAVID P. BRYANT/  
Supervisory Patent Examiner, Art Unit 3726